I CLAIM:

1. A method for monitoring an area of coverage around a working tool with the aid of at least one camera comprising the following method steps:

Recording an object-free security zone within the area of coverage as reference background by using the at least one camera;

Checking the reference background with respect to non-homogeneity, wherein the reference background is rejected as non-valid only if the non-homogeneity detected within a predetermined variance distance falls below a predetermined level and the reference background is otherwise classified as valid;

If the reference background is classified as valid, releasing an operation for detecting safety-critical objects entering the security zone by comparing images actually recorded with the at least one camera in the security zone with the valid reference background and wherein a safety-critical object is considered recognized if the respective actual image deviates significantly from the valid reference background.

2. The method according to claim 1, wherein the at least one camera has a matrix-type arrangement of receiving elements, which are combined in a grid of planar zones, respectively with a predetermined number of receiving elements, wherein at least one reference image characteristic is derived from output signals of the receiving elements of respectively one zone and the at least one reference characteristic serves to classify the non-homogeneity of the reference background.

3. The method according to claim 2, wherein the output signals for the receiving elements of the at least one camera are formed by grey values or color values and that within each zone, the average value for the grey values or the color values of the individual receiving elements is formed as a reference image characteristic for classifying the non-homogeneity of the reference background.

4. The method according to claim 2, wherein the variance distance is formed by the distance between two adjacent planar zones of the grid.

5. The method according to claim 4, wherein the size of the variance distance corresponds to half the size of a minimum object size to be detected.

6. The method according to claim 5, wherein the reference background is rejected as non-valid if two adjacent planar zones have the same characteristic value within predetermined tolerance limits.

7. A device for monitoring an area of coverage around a working tool comprising:

at least one camera;

at least one computer unit that is coupled to the at least one camera and at least one switching output that is coupled to the working tool, said switching output having means, integrated into the at least one computer unit, for storing and classifying a

reference background, wherein the reference background is an image, recorded with the at least one camera, of an object-free security zone within the area of coverage;

means, integrated into the at least one computer unit, for releasing an object detection system in dependence on the classification of the reference background; and

means, integrated into the computer unit, for comparing actual images of the security zone, recorded with the camera and a reference background classified as valid, wherein a detection of a safety-critical object within the security zone occurs if the actual image differs significantly from the reference background and wherein the working tool is activated via the switching output that is triggered by the computer unit, but only if no safety-critical object is located within the security zone.

8. The device according to claim 7, wherein a binary control signal having switching states is generated in the at least one computer unit, the switching states of which indicate whether the existing reference background is classified as valid or non-valid.

9. The device according to claim 8, wherein the object detection system is released or blocked in dependence on the switching states of the binary control signal.

10. The device according to claim 8, wherein the switching states of the binary control signal can be output via an indicator output that is coupled to the at least one computer unit.

11. The device according to claim 10, wherein the device is provided with two cameras, which form a redundant camera system, onto which a beam divider projects images of the area of coverage.

12. The device according to claim 11, wherein this device comprises two computer units, one respective computer unit being associated with one of the cameras for evaluating the image information recorded therein and wherein both computer units are coupled so as to perform mutual checks.

13. The device according to claim 12, wherein the switching output is actuated by both computer units.

14. The device according to claim 12, wherein the indicator output is activated by both computer units.

15. The device according to claim 11, wherein the two cameras of the camera system are identical or at least operate in the same way.

16. The device according to claim 12, wherein the two computer units have identical hardware structures.

17. The device according to claim 12, wherein the two computer units have different software structures.

18. The device according to claim 12, wherein the reference background is stored in each computer unit and is checked with respect to its non-homogeneity.

19. The device according to claim 18, wherein the object detection system is released via the binary control signal, but only if the reference background in both computer units is classified as valid.

20. The device according to claim 12, wherein for the object detection system a comparison is made between the images actually recorded with the two cameras and the reference background is stored in the two computer units.

21. The device according to claim 20, wherein image characteristics are obtained for the object detection system in the two computer units from the image information that is input with the aid of the two associated cameras.

22. The device according to claim 21, wherein the image characteristics determined in the two computer units are compared via the connection between the two computer units.

23. The device according to claim 22, wherein the working tool is shut down via the switching output if the image characteristics detected in the individual computer units do not coincide.

24. The device according to claim 22, wherein a working tool is shut down via the switching output if image characteristics assigned to a safety-critical object located in the security zone are detected jointly in both computer units.

25. The device according to claim 7, wherein within the area of coverage that is covered by the camera system, at least one warning zone is defined in addition to the security zone, wherein a warning indicator is activated via a warning output if a safety-critical object is located in the warning zone.

26. The device according to claim 25, wherein the warning zone is adjacent to the security zone.

27. The device according to claim 25, wherein the reference background comprises the security zone and the warning zone.

28. The device according to claim 26, wherein the movement direction of a safety-critical object within the warning zone can be detected.

29. The device according to claim 28, wherein the warning indicator is activated only if a safety-critical object is located within the warning zone and moves toward the security zone.

30. The device according to claim 25, wherein several security zones and warning zones are respectively provided, wherein one switching output is assigned respectively to a respective security zone and a warning output is assigned to each respective warning zone.

31. The device according to claim 30, wherein the working tool is shut down if a safety-critical object is located in at least one security zone.

32. The device according to claim 7, wherein the working tool is one of a working robot and an assembly robot.

33. The device according to claim 7, wherein the working tool is a printing machine .

34. The device according to claim 7, wherein the working tool is a feeding device.

35. The device according to claim 7, wherein the working tool is a press.

36. The device according to claim 7, wherein the working tool is a folding press.

37. The device according to claim 7, wherein the safety-critical objects are persons.

38. The device according to claim 7, wherein the safety-critical objects are arms of a person.